

# Virtual Reality Universal Laser Safety Goggles

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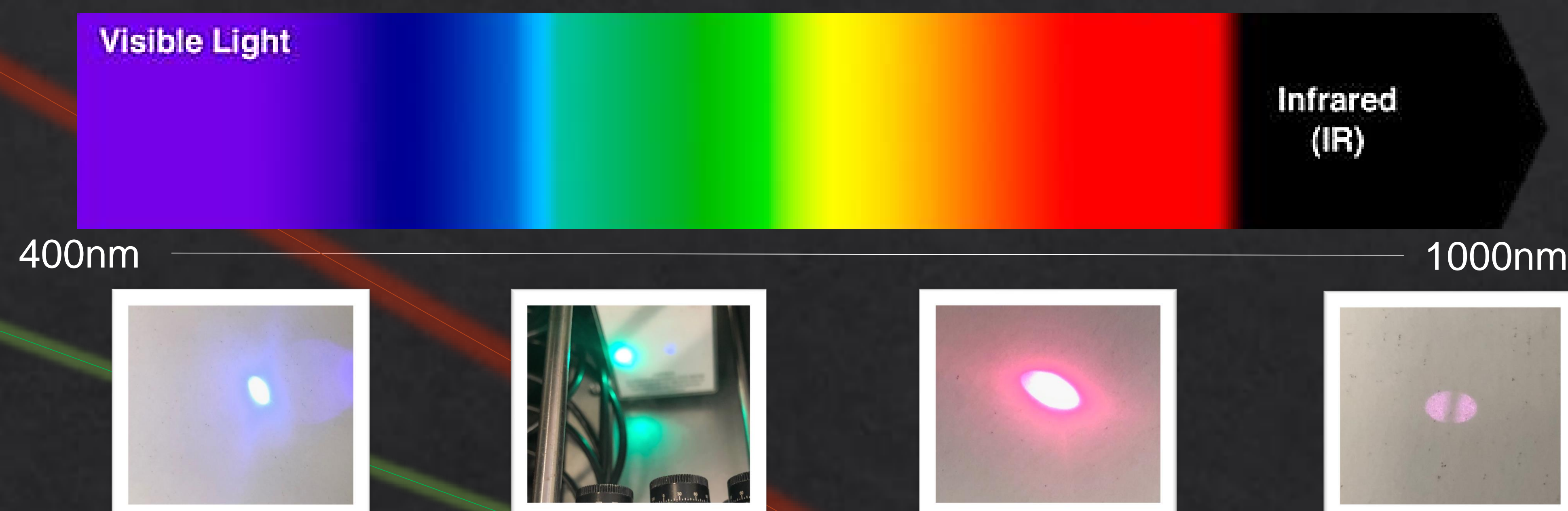


## Introduction

A Virtual Reality (VR) headset was utilized to facilitate a safe indirect visual observation of visible and IR laser beams of various power levels. Google cardboard was used as a proof of concept prototype. Through the use of the camera application on an iPhone X, a live video feed of the front camera was streamed onto the visor. This digitally isolated the laser light and the observed light light. The applications of such a headset are numerous, spanning medical, military, scientific, and industrial sectors.

## Proof of Concept

Successfully observed laser wavelengths between 400-1000 nm Simultaneously



Laser spots observable through the visor – Left to right: 405 nm, 520 nm, 685 nm, 980 nm (invisible to the eye)



Proof of Concept:  
**Google Cardboard + Any Smartphone!**

## Future Works

Through stereoscopic triangulation, beam angles and distances can be approximated. The auto-exposure allows for the observation of lasers of various power levels. Through image processing, laser beam characterization can be achieved.